

Serial No. 10/796,681
Art Unit: 1796

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AMENDMENTS TO THE CLAIMS

What is claimed is:

1. (Currently Amended) A coating material comprising components:
 - a. 40 to 90 wt.% of at least one oligomeric substance selected from the group consisting of epoxy (meth)acrylates, polyester (meth)acrylates, polyether (meth)acrylates, and polyurethane (meth)acrylates, wherein said oligomeric substance is linear or branched and contains at least two unsaturated double bonds;
 - b. 5 to 60 wt.% of at least one low molecular weight (meth)acrylate selected from the group consisting of monofunctional, difunctional, trifunctional and polyfunctional (meth)acrylate compounds;
 - c. 0.1 to 20 wt.% of at least one (meth)acrylate compound different from a and b containing one or more acidic groups; and
 - d. 0.1 to 20 wt.% of at least one auxiliary substance selected from the group consisting of adhesion promoters different from c, flow-control agents, defoaming agents, light stabilizers, dyes, pigments, biocides, fillers and photoinitiators;wherein 2.0 to 9.7 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds; and
wherein at least one of nanoparticulate aluminum oxide or hydrophobic silica is present in highly dispersed form in the coating material as said fillers and said components are selected such that the coating material has a viscosity of less than 1000 mPas within a temperature range of 0 to 90°C.
2. (Previously Presented) A coating material according to claim 1 wherein a, b, c, and d are selected and homogenized together such that the coating material has a viscosity within a temperature range of 15°C to 70°C of less than 300 mPas.
3. (Original) A coating material according to claim 1 additionally comprising up to 20 wt.% of at least one silane selected from the group consisting of dialkoxysilanes and trialkoxysilanes

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wherein said at least one silane contains at least one functional group other than alkoxy groups.

4. (Original) A coating material according to claim 1, wherein component c) comprises at least one methacrylate compound selected from the group consisting of phosphoric (meth)acrylate compounds and phosphonic (meth)acrylate compounds.
5. (Original) A coating material according to claim 1 comprising at least one dye or pigment.
6. (Original) A coating material according to claim 1 comprising at least one biocide.
7. (Cancelled)
8. – 27. (Cancelled)

28. (Currently Amended) A coating material comprising:

- a. 45 to 85 wt.% of at least one oligomeric substance having at least two unsaturated double bonds selected from the group consisting of epoxy (meth)acrylates, polyester (meth)acrylates, polyether (meth)acrylates, and polyurethane (meth)acrylates, wherein said oligomeric substance is linear or branched;
- b. 10 to 60 wt.% of at least one (meth)acrylate selected from the group consisting of monofunctional, difunctional, trifunctional and polyfunctional (meth)acrylate compounds;
- c. 0.5 to 10 wt.% of at least one (meth)acrylate compound containing one or more phosphoric or carboxyl acidic functional groups;
- d. 0.5 to 15 wt.% of at least one radical photoinitiator; and
- e. up to 20 wt.% of at least one silane selected from the group consisting of dialkoxysilanes and trialkoxysilanes wherein said at least one silane contains at least one functional group other than alkoxy groups;

wherein at least one of nanoparticulate aluminum oxide or hydrophobic silica is present in highly dispersed form in the coating material and a.-e. are selected such that the coating material has a viscosity of less than 1000 mPas within a temperature range of 0 to

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~~90°C wherein 2.0 to 9.7 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds.~~

29. (Cancelled)

30. (Cancelled)

31. (Previously Presented) A coating material according to claim 28, wherein component c) comprises at least one methacrylate compound selected from the group consisting of phosphoric (meth)acrylate compounds and phosphonic (meth)acrylate compounds.

32. (Previously Presented) A coating material according to claim 28 additionally comprising up to 20 wt.% of at least one silane selected from the group consisting of dialkoxysilanes and trialkoxysilanes wherein said at least one silane contains at least one functional group other than alkoxy groups.

33. (Cancelled)

34. (Cancelled)

35. (Previously Presented) A coating material according to claim 28 comprising at least one antibacterial or biocidal component.

36. (Currently Amended) A high-energy radiation curable coating material for metal surfaces comprising:

- a. 40 to 90 wt.% of a component of at least one oligomeric substance selected from aromatic epoxy (meth)acrylates, said at least one oligomeric substance optionally including at least one of polyester (meth)acrylates, polyether (meth)acrylates, and polyurethane (meth)acrylates, wherein said oligomeric substance contains at least two unsaturated double bonds;
- b. 5 to 60 wt.% of a component of at least one low molecular weight (meth)acrylate

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selected from the group consisting of monofunctional, difunctional, trifunctional and polyfunctional (meth)acrylate compounds different from a;

- c. 0.1 to 20 wt.% of a component of at least one (meth)acrylate compound different from a and b containing one or more acidic groups; and
- d. 0.1 to 20 wt.% of a component of at least one auxiliary substance selected from the group consisting of adhesion promoters, flow-control agents, defoaming agents, light stabilizers, dyes, pigments, biocides, fillers and photoinitiators; wherein at least one of nanoparticulate aluminum oxide or hydrophobic silica is present in highly dispersed form as said fillers; and

wherein said components are selected and homogenized such that the coating material has a viscosity of less than 1000 mPas within a temperature range of 0 to 90°C and the coating material deposited on metal surfaces cross-links to become a formable surface coating upon curing.

37. (Previously Presented) A coating material according to claim 36, wherein component a) comprises 34.3 to 80.8 wt.%, based on total coating material, of aromatic epoxy (meth)acrylates.

38. (Previously Presented) A coating material according to claim 36, wherein component b) comprises 2.0 to 9.7 wt.%, based upon total coating material, of difunctional, trifunctional and polyfunctional (meth)acrylate compounds.

39. (Currently Amended) A coating material comprising:

- a. 40 to 90 wt.% of at least one oligomeric substance selected from the group consisting of epoxy (meth)acrylates, polyester (meth)acrylates, polyether (meth)acrylates, and polyurethane (meth)acrylates, wherein said oligomeric substance is linear or branched and contains at least two unsaturated double bonds;
- b. 5 to 60 wt.% of at least one low molecular weight (meth)acrylate selected from the group consisting of monofunctional, difunctional, trifunctional and polyfunctional (meth)acrylate compounds;
- c. 0.1 to 20 wt.% of at least one (meth)acrylate compound different from a and b containing one or more acidic groups and comprising at least one methacrylate

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compound selected from the group consisting of phosphoric (meth)acrylate compounds and phosphonic (meth)acrylate compounds; and

- d. 0.1 to 20 wt.% of at least one auxiliary substance selected from the group consisting of adhesion promoters different from c, flow-control agents, defoaming agents, light stabilizers, dyes, pigments, biocides, fillers and photoinitiators;

wherein 2.0 to 15.4 wt.%, based upon total coating material, of the at least one low molecular weight (meth)acrylate is selected from difunctional, trifunctional and polyfunctional (meth)acrylate compounds; and

wherein at least one of nanoparticulate aluminum oxide or hydrophobic silica is present in highly dispersed form in the coating material as said fillers and a.-d. are selected such that the coating material has a viscosity of less than 1000 mPas within a temperature range of 0 to 90°C.

40. (New) A coating material according to claim 28, comprising:

aromatic epoxy (meth)acrylate as component a.; and
neopentyl glycol (meth)acrylate, optionally alkoxyated, as component b.

41. (New) A coating material according to claim 28, comprising:

aromatic epoxy (meth)acrylate and aliphatic hexafunctional urethane (meth)acrylate as component a.; and
Isobornyl (meth)acrylate and neopentyl glycol (meth)acrylate, optionally alkoxyated, as component b.